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09/823,179	03/29/2001	Winston W. Hodge	COAX 01.003	9147

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EXAMINER	
AKLILU, KIRUBEL	
ART UNIT	**PAPER NUMBER**
2614	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/823,179	HODGE ET AL.	
	Examiner	Art Unit	
	Kirubel Aklilu	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 22 is objected to because of the following informalities: Claim 22 recites "The digital headend system of **claim 1**". The examiner assumes this is a typographical error and the claim should read "The digital headend system of **claim 21**". Appropriate correction is required.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. **It is important that the abstract not exceed 150 words** in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-45** are rejected under 35 U.S.C. 102(b) as being anticipated by Hylton et al. (U.S. Patent # 5,613,191).

1. As for **Claim 1, 11 and 21**, Hylton et al. teach a digital headend system for communicating a plurality of video packets, a plurality of data packets, a plurality of voice packets, and a plurality of control packets (The limitation of a digital headend system is met by col. 3 lines 47-61 "In an exemplary implementation of the present invention, real time encoders receive video programs and encode the information for those programs into packets of compressed digital data. The head end may also receive previously encoded video program material from other sources, such as a digital server or a digital transmission media . . . A combined spectrum signal containing these channels is delivered to the subscribers premise through any suitable multimedia distribution and delivery architecture." The limitation of video, voice and control packets is met by col. 4 lines 56-58 "The ADSL connection provides a 1.5 mbits/s downstream video information channel, a two-way telephone connection, and a 16 kbits/s control channel." The limitation of data packets is met by col. 3 lines 55-56 "A digital modulator, such as a 64 or 256 QAM modulator, modulates each digitally multiplexed packet data stream for transport in one unique channel." Also, since applicant is claiming a headend "system", it is interpreted that the receiving units such as the customer set top boxes (Digital Entertainment Terminals, DETs) and the communication network in between can be part of the headend system), comprising:

a buffering module configured to receive said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets (Hylton teaches a Host data terminal (HDT) in communication with plural optical network unit (ONU) that services as many as 4 digital entertainment terminals (DET) that buffers the packets transmitted to the DET see col. 13 lines 13-45 "One HDT will communicate with a large number of optical network unit (ONU's) 1210, two of which are shown. . .When the HDT selects each ATM cell for transmission to a specific DET, elements on the line card communicating with the particular ONU will buffer the cell as necessary and place the cell in the time slot for that DET on the downstream fiber of optical fiber pair 1190. The cells selected for a particular DET, together with cells going to other DET's served by the same ONU multiplexed into their respective time slots, are applied to an electrical to optical converter and transmitted over the downstream fiber to the ONU 1210 serving the particular subscriber's premises." The ONU is interpreted to be a buffering module that buffers the plurality of packets transmitted from the headend before transmitting them to the DETs);

a first re-packetization module in communication with said buffering module, said first re-packetization module configured to combine said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets to generate a first re-packetization module output (Hylton teaches a Network Interface Module (NIM) present on each DET that receives the plurality of packets from the ONU and forwards the packets for further processing by various components of the DET. See Fig. 4 unit 2101 Network Interface Module, col. 25 lines 22-28 "Referring to

FIG. 4, for each different type of network, the DET 2100 will include a network interface module 2101 providing the actual physical connection to the particular type of network. The network interface module 2101 will also perform any format conversion necessary between signal formats utilized by the network and signal formats used within the DET 2100." The format conversion done by the NIM is interpreted to be re-packetization and it is also interpreted that the packets are combined because a single output is seen coming out of the NIM going to the MPEG system DEMUX in Fig. 4.); and

a first synchronizing module configured to receive said first re-packetization output and configured to generate a first synchronous output stream having said plurality of video packets, said plurality of data packets, said plurality of voice packets and said plurality of control packets (See col. 26 lines 11-39 "The MPEG video decoder 829 decompresses received video packet signals to produce a digital video signal, and the MPEG audio decoder 831 decompresses received audio packets to produce left and right digitized stereo signals. For at least some functions, the MPEG decoders 829, 831 may be controlled in response to signals from the microprocessor 810." The limitation of the synchronization module is met by MPEG decoders 829 and 831. The output video and audio data from the DET is inherently synchronous because the video and audio data is presented synchronously to the user. The PID data inherently associated with the MPEG video and audio files are interpreted to be the data packets of the transport stream. The DET is interpreted to be a synchronization module that outputs synchronous output stream).

2. As for **Claim 2, 12,** and **22** the limitations of Claim 2 fall within the buffering module limitation as described above in claim 1. It is interpreted that the ONU is able to buffer the video packets, data packets, voice packets, and control packets. Applicant in the specification and drawings has presented one buffering unit that is able to buffer video packets, voice packets, data packets, and control packets and not explicitly separate buffering modules for each type of packet. See Applicant's drawing FIG. 6 unit 414 Buffer and [0098] "In the illustrative data flow provided in FIG. 6, the buffering module 414 receives a plurality of video packets, data packets, voice packets and control packets. The buffering module 414 represents the general concept of providing a "buffer" or data storage location for the video packets, data packets, voice packets or control packets. More particularly, the one or more video packets 402a, 402b, 402n, 412a, 412b, or 412n are buffered in buffering module 414. The one or more data packets 404a, 404b, 404n, 412a, 412b, or 412n are buffered in buffering module 414. The one or more voice packets 406a, 406n, 412a, 412b, or 412n and the CD-audio packets 408a are also buffered in the buffering module 414. Finally, the control packets 410a, 410b and 410n are also buffered in buffering module 414." Therefore, it is interpreted that the limitation of Claim 2 is met by the ONU buffer as described above in Claim 1.

3. As for **Claim 3,13,** and **23** Hylton et al. teach said first buffering module, said second buffering module, said third buffering module, and said fourth buffering module each are configured to generate a destination address which identifies said first re-packetization

module. See col. 13 lines 18-20 "In the presently preferred implementation, each home or living unit will have as many as four DET's. Each ONU 1210 and the downstream fiber of the pair 1190 to the ONU 1210 will provide downstream video services to a number of homes, e.g. 8 to 24." It is inherent that the ONU will have to generate destination address that identifies each re-packetization module (the NIM of the respective DET) because each ONU services more than one DET.

4. As for **Claim 4-6,14-16,** and **24-26** the limitations fall within the limitations of Claims 1 and 3. As for Claims 4 and 6, Hylton et al. teach each ONU services more than one Digital entertainment unit. See col. See col. 13 lines 18-20 "In the presently preferred implementation, each home or living unit will have as many as four DET's. Each ONU 1210 and the downstream fiber of the pair 1190 to the ONU 1210 will provide downstream video services to a number of homes, e.g. 8 to 24." Therefore, a second DET services by the same ONU will have its respective NIM which is interpreted as a second re-packetization module and the MPEG decoders of the second DET is interpreted to be a second synchronization module. As for claim 5, the limitations of Claim 5 are analyzed with respect to Claim 3. It is interpreted that the ONU will have to address the second DET in the same manner as described in Claim 3.

7. As for **Claims 7-9**, **17-18,** and **27-28** Hylton et al. teach each of said plurality of video packets, data packets, and voice packets are MPEG transport stream packets. See col.

8 lines 41-44 "the preferred embodiments of the present invention utilize MPEG encoding and decoding."

10. As for **Claim 10, 20 and 30**, Hylton et al. teach said first synchronous output stream occupies one channel. See fig. 4 unit 2139 RF Modulator and RF OUT, col. 27 lines 46-55 "The type of connection of the DET 2100 to the television set depends on the capabilities of the user's television set. If the user has a monitor type television capable of receiving baseband video and stereo audio inputs, the appropriate terminals of the television would connect directly to the video and audio output terminals of the DET 2100. If the subscriber does not have such a television monitor, then the RF output of the modulator 2139 would be connected to the cable or antenna input connection of the television, e.g. by coaxial cable." When co-axial cable is used to combine all the data, video and audio signals and transmit the synchronous signal to the television set using a single coaxial cable, it is interpreted that the synchronous output occupies one channel.

19. As for Claims **19 and 29**, Hylton et al. teach said synchronization module is a programmable logic module having a memory module (As described in claim 1, the DET is interpreted to be the synchronization module that outputs a synchronous stream to the television set. Hylton et al. teach said DET is a programmable logic module having a memory module. See col. 14 lines 3-8 "The digital entertainment terminal (DET) 1217 is a programmable device to which different applications programs and/or portions of

the operating system will be downloaded from a gateway device in order to permit the DET to interact with different information service providers and thereby offer the user totally different types of services." And col. 26 lines 3-10 "The DET 2100 includes a CPU 2105, comprising a 386 or 486 microprocessor 2110 and associated system memory 2120. The system memory 2120 includes at least 2 mbytes of volatile dynamic RAM 2122 and 1 mbyte of non-volatile RAM 2121. The microprocessor 2110 includes a small amount of ROM (not shown) storing "loader" programming needed to control wake-up. An EPROM memory (not shown) also may be added.").

31. As for **Claim 31, 36** and **41** Hylton et al. teach a method for communicating a plurality of video packets, a plurality of data packets, a plurality of voice packets, and a plurality of control packets (col. 3 lines 47-61 "In an exemplary implementation of the present invention, real time encoders receive video programs and encode the information for those programs into packets of compressed digital data. The head end may also receive previously encoded video program material from other sources, such as a digital server or a digital transmission media . . . A combined spectrum signal containing these channels is delivered to the subscribers premise through any suitable multimedia distribution and delivery architecture." The limitation of video, voice and control packets is met by col. 4 lines 56-58 "The ADSL connection provides a 1.5 mbits/s downstream video information channel, a two-way telephone connection, and a 16 kbits/s control channel." The limitation of data packets is met by col. 3 lines 55-56 "A

digital modulator, such as a 64 or 256 QAM modulator, modulates each digitally multiplexed packet data stream for transport in one unique channel."), comprising:

receiving said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets (Hylton teaches a Host data terminal (HDT) in communication with plural optical network unit (ONU) that services as many as 4 digital entertainment terminals (DET) that buffers the packets transmitted to the DET see col. 13 lines 13-45 "One HDT will communicate with a large number of optical network unit (ONU's) 1210, two of which are shown. . .When the HDT selects each ATM cell for transmission to a specific DET, elements on the line card communicating with the particular ONU will buffer the cell as necessary and place the cell in the time slot for that DET on the downstream fiber of optical fiber pair 1190. The cells selected for a particular DET, together with cells going to other DET's served by the same ONU multiplexed into their respective time slots, are applied to an electrical to optical converter and transmitted over the downstream fiber to the ONU 1210 serving the particular subscriber's premises." The ONU is interpreted to be a buffering module that receives the plurality of packets and buffers the packets transmitted from the headend before transmitting them to the DETs);

communicating said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets across a shared bus (The communication channel between said ONU and the DETs is interpreted to be a shared bus because one ONU serves more than one DET. Therefore, it is interpreted that the communication channel between the ONU and the plural DETs is shared. See col. 13

lines 18-20 "Each ONU 1210 and the downstream fiber of the pair 1190 to the ONU 1210 will provide downstream video services to a number of homes, e.g. 8-24"); and processing said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets communicated across said shared bus to occupy one communications channel (See Fig. 4 unit 2100 DET, col. 25 lines 22-28 "Referring to FIG. 4, for each different type of network, the DET 2100 will include a network interface module 2101 providing the actual physical connection to the particular type of network. The network interface module 2101 will also perform any format conversion necessary between signal formats utilized by the network and signal formats used within the DET 2100." It is interpreted that the DET processes said plurality of packets communicated across said shared bus to occupy one communication channel because the output of the DET is fed directly into a television set, which is interpreted to occupy one channel. See also See fig. 4 unit 2139 RF Modulator and RF OUT, col. 27 lines 46-55 "The type of connection of the DET 2100 to the television set depends on the capabilities of the user's television set. If the user has a monitor type television capable of receiving baseband video and stereo audio inputs, the appropriate terminals of the television would connect directly to the video and audio output terminals of the DET 2100. If the subscriber does not have such a television monitor, then the RF output of the modulator 2139 would be connected to the cable or antenna input connection of the television, e.g. by coaxial cable." When co-axial cable is used to combine all the data, video and audio signals and transmit the synchronous

signal to the television set using a single coaxial cable, it is interpreted that the synchronous output occupies one channel.).

32. As for **Claim 32, 37** and **42** Hylton et al. teach, generating a synchronous output stream for said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets (See col. 26 lines 11-39 "The MPEG video decoder 829 decompresses received video packet signals to produce a digital video signal, and the MPEG audio decoder 831 decompresses received audio packets to produce left and right digitized stereo signals. For at least some functions, the MPEG decoders 829, 831 may be controlled in response to signals from the microprocessor 810." The output video and audio data from the DET is inherently synchronous because the video and audio data is presented synchronously to the user. The PID data inherently associated with the MPEG video and audio files are interpreted to be the data packets of the transport stream.).

33. As for **Claim 33, 38** and **43** Hylton et al. teach said receiving said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets, further comprises:

buffering said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets (Hylton teaches a Host data terminal (HDT) in communication with plural optical network unit (ONU) that services as many as 4 digital entertainment terminals (DET) that buffers the packets

transmitted to the DET see col. 13 lines 13-45 "One HDT will communicate with a large number of optical network unit (ONU's) 1210, two of which are shown. . .When the HDT selects each ATM cell for transmission to a specific DET, elements on the line card communicating with the particular ONU will buffer the cell as necessary and place the cell in the time slot for that DET on the downstream fiber of optical fiber pair 1190. The cells selected for a particular DET, together with cells going to other DET's served by the same ONU multiplexed into their respective time slots, are applied to an electrical to optical converter and transmitted over the downstream fiber to the ONU 1210 serving the particular subscriber's premises." The ONU is interpreted to be a buffering module that buffers the plurality of packets transmitted from the headend before transmitting them to the DETs); and

identifying a re-packetization module to communicate said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets (See col. 13 lines 18-20 "In the presently preferred implementation, each home or living unit will have as many as four DET's. Each ONU 1210 and the downstream fiber of the pair 1190 to the ONU 1210 will provide downstream video services to a number of homes, e.g. 8 to 24." It is inherent that the ONU will have to generate destination address that identifies each re-packetization module (the NIM of the respective DET) because each ONU services more than one DET.).

34. As for **Claim 34, 39** and **44** Hylton et al. teach said processing said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets, further comprises:

combining said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets in a re-packetization module to generate a re-packetization output (Hylton teaches a Network Interface Module (NIM) present on each DET that receives the plurality of packets from the ONU and forwards the packets for further processing by various components of the DET. See Fig. 4 unit 2101 Network Interface Module, col. 25 lines 22-28 "Referring to FIG. 4, for each different type of network, the DET 2100 will include a network interface module 2101 providing the actual physical connection to the particular type of network. The network interface module 2101 will also perform any format conversion necessary between signal formats utilized by the network and signal formats used within the DET 2100." The format conversion done by the NIM is interpreted to be re-packetization and it is also interpreted that the packets are combined because a single output is seen coming out of the NIM going to the MPEG system DEMUX in Fig. 4.); and

generating a synchronous output stream from said first re-packetization output (See col. 26 lines 11-39 "The MPEG video decoder 829 decompresses received video packet signals to produce a digital video signal, and the MPEG audio decoder 831 decompresses received audio packets to produce left and right digitized stereo signals. For at least some functions, the MPEG decoders 829, 831 may be controlled in response to signals from the microprocessor 810." The output video and audio data

from the DET is inherently synchronous because the video and audio data is presented synchronously to the user. The PID data inherently associated with the MPEG video and audio files are interpreted to be the data packets of the transport stream.).

35. As for **Claim 35, 40** and **45** Hylton et al. teach said processing said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets, further comprises:

combining said plurality of video packets, said plurality of data packets, said plurality of voice packets, and said plurality of control packets in said re-packetization module to generate a re-packetization output (Hylton teaches a Network Interface Module (NIM) present on each DET that receives the plurality of packets from the ONU and forwards the packets for further processing by various components of the DET. See Fig. 4 unit 2101 Network Interface Module, col. 25 lines 22-28 "Referring to FIG. 4, for each different type of network, the DET 2100 will include a network interface module 2101 providing the actual physical connection to the particular type of network. The network interface module 2101 will also perform any format conversion necessary between signal formats utilized by the network and signal formats used within the DET 2100." The format conversion done by the NIM is interpreted to be re-packetization and it is also interpreted that the packets are combined because a single output is seen coming out of the NIM going to the MPEG system DEMUX in Fig. 4.); and

generating a synchronous output stream from said first re-packetization output (See col. 26 lines 11-39 "The MPEG video decoder 829 decompresses received video

packet signals to produce a digital video signal, and the MPEG audio decoder 831 decompresses received audio packets to produce left and right digitized stereo signals. For at least some functions, the MPEG decoders 829, 831 may be controlled in response to signals from the microprocessor 810." The output video and audio data from the DET is inherently synchronous because the video and audio data is presented synchronously to the user. The PID data inherently associated with the MPEG video and audio files are interpreted to be the data packets of the transport stream.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirubel Aklilu whose telephone number is 571-272-7342. The examiner can normally be reached on 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KA
5/13/05

NGOC-YEN VU
PRIMARY EXAMINER